

## Regulators' Review Template for Forms

Draft Version 6, 10-14-2017

### Guiding principles

- If multiple explanations are possible for an observation in the record, then for purposes of recommendations for further action, reviewers should assume the worst case reasonable explanation.
- The Workplan is an FAA primary document, so the Navy and its contractors must follow it just as any other FAA primary document. Further action recommended action should be based on a technical decision, using best professional judgement, as to whether the record is sufficient to support a conclusion that the ROD requirements have been met to “ensure that no residual radioactivity is present at levels above the remedial goals.” Otherwise EPA cannot sign a FOST.
- Any falsification anywhere in the process in a given survey units calls into question any findings within that survey unit, and resampling is recommended. If the same team has done the work within a given survey unit, then they could have engaged in falsification during multiple aspects of work in that survey unit.

### Flag in Plots

1. Box plots
  - a. Significantly different populations; look at variability of range for each radionuclides provided
  - b. Biased lower than the others, would expect biased to be similar to or higher than systematic.
2. Q-Q plots - Slope break, sometimes flatter, sometimes steeper, which would be sign of different populations; slopes should be similar for various scan types of each radionuclide (not necessarily for K-40)

### Flag in forms

- c. Multiple rounds of excavations
- d. Gamma scan or static not provided or range less than 2,000-3,000 counts per min; Scan and statics not consistent (one example showed a range of 2,900 to 9,400 which is normal)
- e. Off site and on-site lab results significant difference, e.g. > 2X
- f. Time Series – Time series show anomalies or missing time series, e.g. S024, Cs-137 was remediated but graphs not provided

Other – Open-ended: anything else that looks noteworthy

### Enter into Review Spreadsheet:

- A. Sign of falsification? 1=yes, 0=no, plus add summary of why

Draft – Internal, deliberative, predecisional

- B. Failure to follow workplan? 1=yes, 0=no, plus add summary of why
- C. Level of concern/need for resampling
  - a. 2=high level of concern, e.g. yes signs of potential deliberate falsification found, > 2-3 red flags from above
  - b. 1= need further review, e.g. no sign of potential deliberate falsification, some uncertainty due to missing or unclear information, 1 red flag found
  - c. 0=low, e.g. nothing noteworthy observed
- D. Comments – Other – anything not already covered elsewhere
- E. Followup research questions = Do we need more info from Navy to make determinations

Next sections: Don't send to Navy, internal only:

- F. Recommend for PCA analysis
- G. Discuss with group - ambiguous/grey area should be reviewed by the group
- H. Scoring ranking (this was the original scoring to prioritize our first reviews. I've changed the order of the spreadsheet to numerical order, but I'm preserving the scoring here in case we want to re-sort later by score.)

**Minor issues – Do not flag:**

- 1. A few negative results
- 2. K-S tests – not meaningful
- 3. Dave tried to look through lab data in the SUPR's, but that was not helpful

**Notes regarding entries into spreadsheet:** For final version, please keep in mind the following

- Keep comments factual. To indicate your level of confidence, you can choose language such as “it appears,” “could be an indication,” “seems to be a likely sign,” depending on your actual level of confidence based on your professional judgement. Reviewer could also say something like “we were unable to come up with any other explanation for the results other than deliberate falsification” for situations in which we are very confident that the data show falsification.
- Please cut & paste from forms using quotation marks to illustrate points.